TABLE 6

1991 ACTUARIAL ASSUMPTIONS

AMERITECH NON-MANAGEMENT MALE EMPLOYEES

ANNUAL RATES OF SEPARATION BEFORE RETIREMENT

service in years t	rates of separation during year t + 1/2 to t + 1 1/2 for employees entering service at age							
	15	20	25	30	35	40	45	50
0	0.198	0.186	0.158	0.135	0.120	0.115	0.117	0.120
1	0.121	0.111	0.087	0.068	0.053	0.044	0.045	0.046
2	0.079	0.070	0.056	0.046	0.042	0.040	0.039	0.040
3	0.059	0.051	0.037	0.034	0.029	0.030	0.030	0.028
4	0.040	0.035	0.026	0.026	0.021	0.026	0.026	0.025
5	0.029	0.026	0.019	0.021	0.017	0.022	0.022	0.025
6	0.023	0.021	0.016	0.017	0.013	0.019	0.020	0.024
7	0.020	0.019	0.015	0.015	0.012	0.017	0.019	0.024
8	0.017	0.016	0.013	0.014	0.011	0.015	0.018	0.028
9	0.014	0.014	0.012	0.012	0.011	0.015	0.018	0.032
10	0.012	0.012	0.011	0.011	0.010	0.015	0.020	0.037
11	0.010	0.010	0.010	0.011	0.010	0.015	0.026	0.040
12	0.009	0.010	0.009	0.010	0.011	0.017	0.029	0.046
13	0.009	0.010	0.009	0.010	0.011	0.017	0.030	0.053
14	0.009	0.010	0.008	0.010	0.012	0.019	0.032	
15	0.009	0.009	0.008	0.010	0.012	0.020	0.036	
16	0.008	0.008	0.008	0.010	0.013	0.022	0.040	
17	0.007	0.008	0.008	0.009	0.013	0.025	0.046	
18	0.007	0.008	0.008	0.009	0.013	0.028	0.053	
19	0.006	0.008	0.008	0.010				
20	0.006	0.008	0.008	0.011				
21	0.006	0.008	0.008	0.011				
22	0.006	0.008	0.008	0.011				
23	0.006	0.008	0.008	0.012				
24	0.007	0.008	0.008					
25	0.007	0.008	0.008					
26	0.008	0.008	0.008					
27	0.008	0.008	0.008					
28	0.008	0.008	0.008					

Source: Industry-wide non-management experience

Note: Based on separations for all causes.

TABLE 7

1991 ACTUARIAL ASSUMPTIONS

AMERITECH NON-MANAGEMENT FEMALE EMPLOYEES

ANNUAL RATES OF SEPARATION BEFORE RETIREMENT

service in years t	rates of separation during year t + 1/2 to t + 1 1/2 for employees entering service at age:							
	15	20	25	30	35	40	45	50
0	0.208	0.194	0.164	0.136	0.113	0.096	0.087	0.088
1	0.148	0.139	0.115	0.094	0.075	0.063	0.057	0.061
2	0.116	0.107	0.087	0.067	0.051	0.039	0.032	0.034
3	0.079	0.081	0.072	0.056	0.040	0.034	0.035	0.032
4	0.071	0.071	0.058	0.045	0.033	0.031	0.030	0.032
5	0.066	0.064	0.048	0.037	0.029	0.029	0.029	0.031
6	0.062	0.057	0.044	0.029	0.026	0.027	0.028	0.031
7	0.057	0.050	0.037	0.025	0.024	0.025	0.028	0.031
8	0.053	0.046	0.030	0.023	0.022	0.024	0.028	0.033
9	0.049	0.042	0.026	0.023	0.022	0.024	0.028	0.033
10	0.044	0.039	0.026	0.022	0.022	0.023	0.028	0.035
11	0.040	0.035	0.026	0.022	0.021	0.023	0.028	0.041
12	0.035	0.031	0.024	0.022	0.021	0.023	0.028	0.046
13	0.031	0.027	0.022	0.022	0.021	0.023	0.028	0.055
14	0.029	0.026	0.020	0.022	0.021	0.022	0.030	
15	0.026	0.024	0.020	0.022	0.021	0.021	0.030	
16	0.022	0.021	0.020	0.021	0.020	0.021	0.030	
17	0.020	0.020	0.020	0.020	0.020	0.020	0.030	
18	0.018	0.018	0.020	0.020	0.018	0.020	0.030	
19	0.018	0.018	0.019	0.020				
20	0.017	0.018	0.019	0.020				
21	0.017	0.018	0.018	0.018				
22	0.016	0.017	0.017	0.016				
23	0.016	0.016	0.016	0.017				
24	0.015	0.015						
25	0.015	0.015						
26	0.015	0.015						
27	0.014	0.015						
28	0.013	0.014						

Source: Industry-wide non-management experience

Note: Based on separations for all causes.

TABLE 9

1991 ACTUARIAL ASSUMPTIONS

AMERITECH MANAGEMENT MALE EMPLOYEES

ANNUAL RATES OF RETIREMENT ON SERVICE PENSION

service in years t	rates of retirement during year t + 1/2 to t + 1 1/2 for employees entering service at age:							
	15	20	25	30	35	40	45	50
14								0.5000
15								0.3000
16								0.3000
17								0.3000
18								0.3000
19					0.0600	0.0860	0.5000	0.9903
20					0.0360	0.0500	0.3000	
21					0.0320	0.1350	0.3000	
22					0.0340	0.2110	0.3000	
23					0.0410	0.1680	0.3000	
24			0.0160	0.0310	0.0630	0.5000	0.9903	
25			0.0150	0.0260	0.0720	0.3000		
26			0.0160	0.0340	0.1860	0.3000		
27			0.0180	0.0460	0.2610	0.3000		
28			0.0210	0.0610	0.2180	0.3000		
29	0.0130	0.0130	0.0340	0.0970	0.5000	0.9903		
30	0.0120	0.0130	0.0410	0.1260	0.3000			
31	0.0120	0.0180	0.0480	0.2350	0.3000			
32	0.0120	0.0220	0.0630	0.3070	0.3000			
33	0.0140	0.0240	0.0810	0.2640	0.3000			
34	0.0150	0.0530	0.1170	0.5000	0.9903			
35	0.0160	0.0620	0.1610	0.3000				
36	0.0190	0.0710	0.2700	0.3000				
37	0.0240	0.0900	0.3400	0.3000				
38	0.0270	0.1100	0.2890	0.3000				
39	0.0740	0.1480	0.5000	0.9903				
40	0.0850	0.1960	0.3000					
41	0.0950	0.3030	0.3000					
42	0.1140	0.3620	0.3000					
43	0.1420	0.2970	0.3000					
44	0.1800	0.5000	0.9903					
45	0.2200	0.3000						
46	0.3260	0.3000						
47	0.3740	0.3000						
48	0.3030	0.3000						
49	0.5000	0.9903						
50	0.3000							
51	0.3000							
52	0.3000							
53	0.3000							
54	0.9903							

Source: Industry-wide management experience

TABLE 10

1991 ACTUARIAL ASSUMPTIONS

AMERITECH MANAGEMENT FEMALE EMPLOYEES

ANNUAL RATES OF RETIREMENT ON SERVICE PENSION

service in years t	rates of retirement during year t + 1/2 to t + 1 1/2 for employees entering service at age:							
	15	20	25	30	35	40	45	50
14								0.5000
15								0.3000
16								0.3000
17								0.3000
18								0.3000
19					0.1800	0.3540	0.5000	0.9949
20					0.1260	0.1360	0.3000	
21					0.1260	0.2850	0.3000	
22					0.1290	0.3240	0.3000	
23					0.1330	0.2700	0.3000	
24			0.0610	0.1040	0.1340	0.5000	0.9949	
25			0.0400	0.0960	0.1460	0.3000		
26			0.0420	0.1210	0.2870	0.3000		
27			0.0460	0.1290	0.3270	0.3000		
28			0.0470	0.1310	0.2770	0.3000		
29	0.0400	0.0450	0.0690	0.1390	0.5000	0.9949		
30	0.2900	0.0320	0.0790	0.1610	0.3000			
31	0.0340	0.0400	0.1010	0.2900	0.3000			
32	0.0380	0.0440	0.1250	0.3350	0.3000			
33	0.0460	0.0460	0.1340	0.2920	0.3000			
34	0.0490	0.0930	0.1520	0.5000	0.9949			
35	0.0520	0.1010	0.1810	0.3000				
36	0.0540	0.1200	0.3000	0.3000				
37	0.0560	0.1320	0.3490	0.3000				
38	0.0590	0.1360	0.3150	0.3000				
39	0.1030	0.1640	0.5000	0.9949				
40	0.1160	0.2040	0.3000					
41	0.1290	0.3200	0.3000					
42	0.1350	0.3750	0.3000					
43	0.1450	0.3440	0.3000					
44	0.1740	0.5000	0.9949					
45	0.2120	0.3000						
46	0.3490	0.3000						
47	0.3980	0.3000						
48	0.3680	0.3000						
49	0.5000	0.9949						
50	0.3000							
51	0.3000							
52	0.3000							
53	0.3000							
54	0.9949							

Source: Industry-wide management experience

TABLE 11

1991 ACTUARIAL ASSUMPTIONS

AMERITECH NON-MANAGEMENT MALE EMPLOYEES

ANNUAL RATES OF RETIREMENT ON SERVICE PENSION

service in years t	rates of retirement during year t + 1/2 to t + 1 1/2 for employees entering service at age:							
	15	20	25	30	35	40	45	50
14								0.5000
15								0.3000
16								0.3000
17								0.3000
18								0.3000
19					0.0550	0.0900	0.5000	0.9903
20					0.0420	0.0650	0.3000	
21					0.0300	0.2090	0.3000	
22					0.0330	0.2790	0.3000	
23					0.0410	0.2060	0.3000	
24			0.0160	0.0330	0.0440	0.5000	0.9903	
25			0.0150	0.0260	0.0560	0.3000		
26			0.0160	0.0280	0.2270	0.3000		
27			0.0170	0.0360	0.2930	0.3000		
28			0.0190	0.0430	0.2200	0.3000		
29	0.0210	0.0225	0.0320	0.0500	0.5000	0.9903		
30	0.0180	0.0195	0.0390	0.0700	0.3000			
31	0.0195	0.0270	0.0430	0.2540	0.3000			
32	0.0210	0.0345	0.0460	0.3190	0.3000			
33	0.0225	0.0390	0.0540	0.2350	0.3000			
34	0.0225	0.0460	0.0670	0.5000	0.9903			
35	0.0270	0.0530	0.0880	0.3000				
36	0.0315	0.0590	0.2850	0.3000				
37	0.0375	0.0640	0.3540	0.3000				
38	0.0405	0.0730	0.2520	0.3000				
39	0.0520	0.0910	0.5000	0.9903				
40	0.0580	0.1080	0.3000					
41	0.0620	0.3300	0.3000					
42	0.0680	0.3930	0.3000					
43	0.0790	0.2720	0.3000					
44	0.0980	0.5000	0.9903					
45	0.1160	0.3000						
46	0.3510	0.3000						
47	0.4110	0.3000						
48	0.2830	0.3000						
49	0.5000	0.9903						
50	0.3000							
51	0.3000							
52	0.3000							
53	0.3000							
54	0.9903							

Source: Industry-wide non-management experience

TABLE 12

1991 ACTUARIAL ASSUMPTIONS

AMERITECH NON-MANAGEMENT FEMALE EMPLOYEES

ANNUAL RATES OF RETIREMENT ON SERVICE PENSION

service in years t	rates of retirement during year t + 1/2 to t + 1 1/2 for employees entering service at age:							
	15	20	25	30	35	40	45	50
14								0.5000
15								0.3000
16								0.3000
17								0.3000
18								0.3000
19					0.1830	0.2500	0.5000	0.9949
20					0.1090	0.1260	0.3000	
21					0.0950	0.2840	0.3000	
22					0.0950	0.3030	0.3000	
23					0.0980	0.2640	0.3000	
24			0.0900	0.1300	0.1070	0.5000	0.9949	
25			0.0510	0.0850	0.1100	0.3000		
26			0.0520	0.0900	0.2880	0.3000		
27			0.0550	0.0950	0.3100	0.3000		
28			0.0580	0.1000	0.2700	0.3000		
29	0.0600	0.0775	0.0800	0.1110	0.5000	0.9949		
30	0.0513	0.0550	0.0870	0.1160	0.3000			
31	0.0513	0.0650	0.0930	0.2960	0.3000			
32	0.0525	0.0700	0.0990	0.3220	0.3000			
33	0.0588	0.0825	0.1050	0.2790	0.3000			
34	0.0650	0.0990	0.1180	0.5000	0.9949			
35	0.0713	0.1040	0.1260	0.3000				
36	0.0788	0.1100	0.3120	0.3000				
37	0.0863	0.1140	0.3460	0.3000				
38	0.0963	0.1200	0.2930	0.3000				
39	0.1170	0.1320	0.5000	0.9949				
40	0.1160	0.1430	0.3000					
41	0.1210	0.3400	0.3000					
42	0.1270	0.3810	0.3000					
43	0.1330	0.3120	0.3000					
44	0.1460	0.5000	0.9949					
45	0.1550	0.3000						
46	0.3660	0.3000						
47	0.4080	0.3000						
48	0.3280	0.3000						
49	0.5000	0.9949						
50	0.3000							
51	0.3000							
52	0.3000							
53	0.3000							
54	0.9949							

Source: Industry-wide non-management experience

TABLE 13

1991 ACTUARIAL ASSUMPTIONS

AMERITECH ACTIVE EMPLOYEES

ANNUAL RATES OF MORTALITY

Age x	rates of mortality during year of age x + 1/2 to x + 1 1/2		Age x	rates of mortality during year of age x + 1/2 to x + 1 1/2	
	Male	Female		Male	Female
15	0.0011	0.0003	43	0.0021	0.0013
16	0.0011	0.0003	44	0.0024	0.0015
17	0.0011	0.0003	45	0.0027	0.0017
18	0.0011	0.0003	46	0.0030	0.0019
19	0.0010	0.0003	47	0.0034	0.0021
20	0.0010	0.0003	48	0.0038	0.0022
21	0.0009	0.0003	49	0.0041	0.0024
22	0.0009	0.0004	50	0.0045	0.0025
23	0.0008	0.0004	51	0.0050	0.0026
24	0.0008	0.0004	52	0.0055	0.0027
25	0.0008	0.0004	53	0.0061	0.0030
26	0.0008	0.0004	54	0.0068	0.0033
27	0.0008	0.0004	55	0.0075	0.0037
28	0.0007	0.0005	56	0.0083	0.0040
29	0.0007	0.0005	57	0.0092	0.0044
30	0.0007	0.0006	58	0.0102	0.0049
31	0.0007	0.0005	59	0.0111	0.0053
32	0.0007	0.0007	60	0.0121	0.0058
33	0.0007	0.0007	61	0.0132	0.0063
34	0.0008	0.0008	62	0.0143	0.0068
35	0.0008	0.0008	63	0.0154	0.0074
36	0.0009	0.0008	64	0.0165	0.0080
37	0.0011	0.0009	65	0.0177	0.0086
38	0.0012	0.0009	66	0.0190	0.0093
39	0.0013	0.0010	67	0.0202	0.0101
40	0.0015	0.0010	68	0.0215	0.0110
41	0.0016	0.0011	69	0.0228	0.0119
42	0.0018	0.0012			

Source: Industry-wide experience

TABLE 14

1991 ACTUARIAL ASSUMPTIONS

AMERITECH SERVICE PENSIONERS

ANNUAL RATES OF MORTALITY

Age x	rates of mortality during year of age x to x + 1		Age x	rates of mortality during year of age x to x + 1	
	Male	Female		Male	Female
45	.0180	.0090	78	.0660	.0400
46	.0180	.0090	79	.0720	.0440
47	.0180	.0090	80	.0780	.0480
48	.0180	.0090	81	.0840	.0530
49	.0180	.0090	82	.0900	.0600
50	.0180	.0090	83	.0980	.0680
51	.0180	.0090	84	.1080	.0760
52	.0180	.0090	85	.1190	.0880
53	.0180	.0090	86	.1320	.0970
54	.0180	.0090	87	.1450	.1060
55	.0180	.0090	88	.1570	.1170
56	.0180	.0090	89	.1730	.1270
57	.0180	.0090	90	.1870	.1390
58	.0180	.0090	91	.2020	.1510
59	.0180	.0090	92	.2170	.1650
60	.0180	.0090	93	.2330	.1800
61	.0180	.0090	94	.2480	.1970
62	.0180	.0100	95	.2650	.2160
63	.0190	.0100	96	.2820	.2370
64	.0200	.0110	97	.3000	.2580
65	.0210	.0120	98	.3190	.2800
66	.0220	.0120	99	.3400	.3050
67	.0240	.0130	100	.3630	.3320
68	.0260	.0150	101	.3880	.3610
69	.0280	.0160	102	.4150	.3940
70	.0310	.0180	103	.4470	.4300
71	.0340	.0200	104	.4860	.4700
72	.0370	.0220	105	.5340	.5190
73	.0410	.0250	106	.5870	.5750
74	.0460	.0270	107	.6500	.6350
75	.0500	.0300	108	.7320	.7030
76	.0550	.0340	109	.8520	.8060
77	.0600	.0370	110	1.0000	1.0000

* For ages prior to 45, the mortality rate is assumed constant at that age value.

Source: Experience of industry-wide service pensioners

TABLE 15

1991 ACTUARIAL ASSUMPTIONS

PERCENTAGE OF ACTIVE AND RETIRED EMPLOYEES DYING WHO HAVE QUALIFIED BENEFICIARIES

Attained age at beginning of year of death	% Qual. Ben. Active Employees		Attained age at beginning of year of death	% Qual. Ben. Active Employees		% Qual. Ben. Retired Employees		Attained age at beginning of year of death	% Qual. Ben. Retired Employees	
	M	F		M	F	M	F		M	F
15	0%	0%	40	94%	76%	83%	65%	70	82%	29%
16	0	0	41	94	75	83	65	71	81	27
17	0	13	42	94	74	83	65	72	80	25
18	8	23	43	95	73	83	65	73	79	23
19	18	33	44	95	72	83	65	74	78	21
20	28	40	45	95	71	83	65	75	77	18
21	37	46	46	95	70	83	65	76	75	16
22	46	51	47	95	68	83	65	77	73	15
23	53	56	48	94	67	83	65	78	71	13
24	60	59	49	94	66	83	65	79	69	11
25	66	62	50	94	64	83	65	80	68	10
26	71	64	51	93	62	83	64	81	66	8
27	75	66	52	93	60	83	63	82	64	7
28	79	68	53	93	57	83	63	83	62	6
29	82	70	54	92	54	83	62	84	59	6
30	85	71	55	92	51	83	61	85	56	5
31	87	73	56	92	48	83	60	86	53	5
32	88	74	57	91	46	83	58	87	50	5
33	90	76	58	91	43	83	56	88	46	4
34	91	77	59	90	41	83	53	89	43	4
35	91	78	60	90	38	84	51	90	40	4
36	92	78	61	89	35	84	49	91	37	3
37	92	78	62	89	32	84	46	92	33	3
38	93	78	63	88	29	84	44	93	29	2
39	93	77	64	87	26	84	41	94	25	2
			65	86	23	87	38	95	20	1
			66	85	20	86	36	96	14	1
			67	84	16	85	34	97	7	1
			68	83	12	84	32	98	1	1
			69	82	6	83	30	99-110	1	1

Source: Industry-wide experience

Exhibit 10

Response to Paragraph 16

of FCC Order of Investigation and Suspension

CC Docket No. 92 - 101

May 26, 1992

Godwins

Paragraph 16 requests information that can be used in a serious impartial evaluation of a macroeconomic model and its results. Ideally, enough information should be provided so that the numerical results produced by a macroeconomic model can be reproduced, or at least checked, by an outside reader with a professional training in economics. In writing the macroeconomic portions of the Godwins report we tried to anticipate the need for reproducibility and included in the report enough information to reproduce the numerical results of the macroeconomic model (See Appendix C of the Godwins report). However, the explanation in Appendix C of the Godwins report is relatively brief, so we will use the opportunity presented by Paragraph 16 to elaborate on various aspects of the macroeconomic model and its calibration.

Before presenting a detailed point-by-point response to items raised in Paragraph 16, it might be helpful to discuss the type of macroeconomic model used in the Godwins report and to contrast this model with conventional large-scale short-run econometric forecasting models. The reason for contrasting the two types of models is that the requests in Paragraph 16 constitute an appropriate set of questions for scrutinizing the results of a conventional large-scale econometric forecasting model. However, some of the questions are not germane for scrutinizing the macroeconomic model used in the Godwins report.

The macroeconomic model used in the Godwins report is a classical general equilibrium model. As discussed in the Godwins report on pp. 26-27, the choice of a type of macroeconomic model for examining the effect on GNP-PI of the introduction of SFAS 106 was guided by a list of five desirable characteristics for a model:

(1) The model should be a multi-sector model allowing for some firms to offer post-retirement health benefits while other firms do not offer such benefits.

(2) The model should explain how production costs are related to the costs of labor and other inputs, and should allow for the possibility of substituting capital for labor as labor becomes more expensive.

(3) The model should provide a specification of the demand for goods related to the overall price level as well as to prices of goods in each sector.

(4) The model should be tractable so that numerical solutions can be computed and readily interpreted.

(5) The model should be internally consistent and based on sound economic foundations.

The classical general equilibrium model used in the Godwins report meets all five of these criteria. However, large-scale commercial econometric models do not meet all of these criteria. In particular, most large-scale commercial econometric models do not meet criteria (4)

and (5). These models typically contain several hundred, or even over a thousand, equations and variables to be forecast. In addition to the sheer difficulty of tracing the effects of so many variables, the forecasts produced by commercial forecasters generally are based also on other factors such as time-series analysis, current data analysis, and "judgment". The fact that the forecasts of these models are based significantly on judgment and current data analysis makes it very difficult for an impartial observer to reproduce the results of these models and obscures the ability to readily interpret the forecasts produced by these commercial forecasters. Commercial large-scale econometric models in general have also been criticized for failure to satisfy criterion (5) that they be internally consistent and based on sound economic foundations. In light of the five desirable characteristics listed above, it was decided that a classical general equilibrium model would be preferable to a large-scale commercial econometric model for the purpose of evaluating the effect on GNP-PI of the introduction of SFAS 106.

An additional consideration that led to the choice of the classical general equilibrium model is related to the timing of the responses to the introduction of SFAS 106. The classical general equilibrium model is intended to gauge the effects of changes after the economy has returned to equilibrium, which may take several calendar quarters or years. This model does not address the extremely difficult task of predicting the dynamic responses over the short-run. By contrast, large-scale econometric models deliver a series of quarterly forecasts of GNP and other macroeconomic variables. However, in our judgment, short-run dynamic behavior is extremely difficult to forecast. Although these models do produce short-run forecasts, we would be cautious in interpreting the timing implied by these short-run forecasts. We decided to sidestep this difficult problem by using the conservative approach of calculating the impact on the macroeconomy after the economy fully responds to SFAS 106. The sense in which this approach is conservative is that it probably will overstate the short-run impact on macroeconomic variables, and thus helps guard against understating the impact on GNP-PI.

Now we will present a detailed point-by-point response to the issues raised in paragraph 16. We will structure the responses according to the following list of requests in Paragraph 16:

(1) fully describe and document the macroeconomic model, including

- (a) the method of estimation
- (b) parameter estimates
- (c) summary statistics

(2) provide the same information as in (1) for any alternate functional forms that were used

(3) provide the data used to estimate the model

(4) provide the data used in making forecasts from the model

(5) provide the results of any sensitivity analyses performed to determine the effect of using different assumptions.

Response to request (1): fully describe and document the macroeconomic model, including the method of estimation, parameter estimates, and summary statistics.

The macroeconomic model used in the Godwins report is described verbally on pp. 27-28 of the Godwins report, and a complete mathematical derivation and description of the model is presented in Part I of Appendix C, pp. 54-57. In order to apply this mathematical model to the United States, numerical values of the parameters need to be selected. In a conventional large-scale commercial econometric model, the numerical values of the parameters are typically estimated econometrically. For these models, it is important to ask about the method of estimation, the parameter estimates, and summary statistics describing the statistical properties of the parameter estimates and the model forecasts. However, the values of the parameters used in the classical general equilibrium model in the Godwins report were not econometrically estimated in the course of the preparation of the Godwins report. Instead, the numerical values of the model were calibrated so that in the baseline calculation without SFAS 106, the numerical results produced by the model matched U.S. macroeconomic data.

The calibration procedure is described in Part II of Appendix C, pp. 58-59, but here we will present a verbal description of the calibration. The utility function of households contains the following parameters:

α_1 and α_2, which measure the relative desirability to consumers of the goods produced in sectors 1 and 2: The larger is α_1 relative to α_2, the larger is the production of good 1 relative to good 2, and the larger is the share of the labor force employed in sector 1. The values of α_1 and α_2 are chosen so that in the initial equilibrium (before the introduction of SFAS 106) 68% of the labor force is employed in sector 1 (which does not offer SFAS 106 benefits) and 32% of the labor force is employed in sector 2 (which offers SFAS 106 benefits). These figures for the shares of employment in sector 1 and in sector 2 match U.S. data as indicated on page 7 of the Godwins report. (Of the 95.8 million private sector employees, 30.7 million are eligible to have a proportion of their charges in retirement met by their employer's medical plan. Thus, the share of the private sector labor force employed in sector 2 is 30.7 million/95.6 million = 32%.)

θ, which is the elasticity of substitution between the consumption of any two goods: The parameter θ equals the price of elasticity of the demand for goods. This parameter was not estimated nor was

it directly calibrated to data. As stated on page 29 of the Godwins report, a value of 1.5 was used for θ, recognizing that this value most likely overstates the true price elasticity of demand. Experimentation with the value of θ indicated that the impact of SFAS 106 on the GNP-PI increases when the price elasticity of demand increases. (See the table on page 41 of the sensitivity analysis in the Godwins report.) Thus, using a high value of θ would guard against understating the impact of SFAS 106 on the GNP-PI.

η, which is the elasticity of labor supply: The elasticity of labor supply has been estimated econometrically in dozens of studies. Rather than try to estimate this elasticity again for the Godwins study, we referred to surveys of econometric studies of labor supply. The first complete paragraph on page 30 of the Godwins report describes the results of these studies and explains the choice of the value of zero for the labor supply elasticity.

We can amplify the discussion on page 30 by pointing out that there is an important difference between the response of labor supply to a *temporary* change in the real wage and a *permanent* change in the real wage. Economists explain the difference by using the concepts of an income effect and a substitution effect. An increase in the real wage increases the reward for working and causes people to substitute some of their time away from leisure toward working. Thus, the substitution effect of an increase in the real wage is an increase in labor supply. In addition, an increase in the real wage makes workers wealthier and reduces the need to work (or equivalently makes workers able to afford more leisure and less labor). This effect, known as the income effect, means that workers will reduce their labor supply in response to an increase in the real wage. Thus, the income effect and the substitution effect work in opposite directions: the substitution effect increases labor supply and the income effect reduces labor supply when the real wage increases. For a temporary increase in the real wage, the worker does not become very much wealthier and the income effect is relatively small. The income effect is likely to be smaller than the substitution effect and thus workers would be likely to increase labor supply in response to a temporary increase in the real wage. In contrast, for a permanent increase in the real wage, the income effect is likely to be relatively large. If the income effect is larger than the substitution effect, then workers will reduce their labor supply in response to a permanent increase in the real wage, which is a negative labor supply elasticity.

The introduction of SFAS 106 is a permanent change and thus any effects on the real wage are to be regarded as permanent effects rather than temporary effects. Thus, in choosing a value of the labor supply elasticity, it is appropriate to use the elasticity describing the response to a permanent change in the real wage. The econometric estimates described on page 30 of the Godwins

report refer to permanent wage changes, and the use of income and substitution effects explains why these estimated elasticities are somewhat negative. The impact of SFAS 106 on the GNP-PI is larger for higher labor supply elasticities, and the labor supply elasticity was set to zero in the baseline calculation to guard against understating the impact on the GNP-PI.

γ, which is the share of nominal expenditure devoted to produced goods: Given the calibration of the other parameters of the model, the value of γ does not affect the calculated effects of SFAS 106 on GNP-PI or the wage rate. As explained in Part II of Appendix C of the Godwins report, the model is calibrated so that in the absence of SFAS 106, prices in all sectors and the GNP-PI are normalized to equal 1.0. With this normalization, the value of γ becomes completely irrelevant to the numerical results of the model.

ϕ, which measures the disutility of labor: With the specification of the utility function in equation (A1) in Appendix C of the Godwins report, the labor supply curve has a constant elasticity with respect to the real wage. With a constant elasticity with respect to the real wage, the labor supply curve depends on only two parameters: the elasticity of labor supply and a location parameter. The elasticity of labor supply has already been discussed. The location parameter was chosen to make labor supply equal to labor demand as indicated in equation (B9) in Part II of Appendix C in the Godwins report. Given the labor supply elasticity and the location parameter, the numerical value of the parameter ϕ is irrelevant.

The production function contains the following parameters:

ρ_1 and ρ_2, which are the shares of labor cost in value added in sectors 1 and 2 respectively: In the baseline calculations, each of these parameters is set equal to 0.64 which is the share of labor cost in value added for the U.S. economy as a whole.

A_1 and A_2, which are productivity parameters in sectors 1 and 2 respectively: These parameters affect the demand for labor in each sector. They are calibrated so that when labor supply equals labor demand, 68% of the labor force is employed in sector 1 and 32% of the labor force is employed in sector 2. The details of this calibration are contained in Part II of Appendix C, pp. 58-59.

Response to request (2): provide the same information as in (1) for any alternate functional forms that were used.

Experimentation with different functional forms and different parameter values involves a fundamental tension. On the one hand,

experimentation with different functional forms and different parameter values offers the benefit of learning how robust the results are to various changes in the model. On the other hand, experimentation may allow the researcher to go on a "fishing expedition", fishing for the functional forms and parameter values that deliver the most pleasing result. We tried to strike the appropriate balance by not experimenting with functional forms (except as described below) and by reporting the results of experimentation with parameter values in the sensitivity analysis.

The only change in the model that might be construed as a change in functional form occurred while the model was in a developmental stage before Godwins was engaged by USTA. In the developmental stage, the original (simpler) functional form for labor supply assumed that the labor supply elasticity must be zero. However, we modified the labor supply function to its current form to allow the labor supply elasticity to be either zero or nonzero. In a sense, this change was not really a change in functional form because the original labor supply function is a special case of the labor supply function used in the Godwins report. The baseline calculations use a value of zero for the labor supply elasticity, but we decided to allow for nonzero labor supply elasticities so that we could perform a sensitivity analysis on the labor supply elasticity. The results of the sensitivity analysis are reported in section IV of the Godwins report.

The functional form used for the production functions is the Cobb-Douglas production function. This functional form is perhaps the most widely used functional form for production functions.

The functional form of the utility function was chosen so that the elasticity of labor supply and the price elasticity of demand for each good are all constant. Various constant values of these elasticities were used in the sensitivity analysis. The functional form of the utility function was also chosen to incorporate the effects on demand of the aggregate price level as well as the individual sector prices.

Response to request (3): provide the data used to estimate the model.

As explained above, the model used in the Godwins report is not an econometric model. The choice of values for various parameters was described in response to request (1).

Response to request (4): provide the data used in making forecasts from the model.

Conventional large-scale commercial econometric models are frequently used to make short-run macroeconomic forecasts of a variety of macroeconomic variables. The forecasts are *conditional* forecasts which means that the forecasts depend on the assumed future values of various input variables to the model. For such models, it is important to examine the data used in making forecasts from the model as well as

summary statistics describing historical forecast accuracy (which is related to request (1c) above).

The macroeconomic model in the Godwins report is not a conventional short-run forecasting model. The only additional data that is used to calculate the macroeconomic effects of the introduction of SFAS 106 is the direct percentage increase in labor costs for firms in sector 2. In the baseline calculations a value of 3% is used for the direct percentage increase in labor costs for firms in sector 2. In the sensitivity analysis values of 2% and 5% are also used.

Summary statistics are often used to gauge the forecasting accuracy of conventional short-run econometric forecasting models, but such statistics are not appropriate in the case of the macroeconomic model used in the Godwins report. Short-run econometric forecasting models produce forecasts of a variety of economic variables and, after the fact, the accuracy or forecast error of each forecast can be evaluated. For instance, a model could be used in 1992 to forecast GNP-PI in 1993. Then after we learn what the actual value of GNP-PI turns out to be in 1993, we can calculate the forecast error as the difference between the forecasted value of GNP-PI and the actual value of GNP-PI. Then after several years, the accuracy of the forecasts can be gauged by appropriate summary statistics of the forecast errors.

The model in the Godwins report is not a forecasting model in the same sense as the large-scale commercial econometric models. The model is not designed to forecast the actual level of GNP-PI. Instead it is designed to estimate the *change* in the level of GNP-PI that results from the introduction of SFAS 106. That is, the model is designed to calculate the difference between the actual value of GNP-PI after the introduction of SFAS 106 and the value of GNP-PI that *would have prevailed* if SFAS 106 were not introduced. Even after the fact, when we observe the actual value of GNP-PI in the presence of SFAS 106, we will not be able to assess the accuracy of the model in the standard way. Remember that the model produces an estimate of how much different GNP-PI is as a result of the introduction of SFAS 106. To assess the accuracy of this estimate we would need to know the actual level of GNP-PI after the introduction of SFAS 106 and we would also need to know the value that GNP-PI would have had if SFAS 106 were not introduced. Even after the fact, we cannot observe or directly measure the level that GNP-PI would have taken in the absence of SFAS 106. Thus traditional measures of forecast accuracy cannot be used to assess the accuracy of the model in the Godwins report.

Three additional remarks are in order at this point. First, the model is specifically designed not to be a forecasting model but instead to focus on how much different GNP-PI is as a result of the introduction of SFAS 106. This focus is exactly the question at issue in the Godwins report.

Second, the fact that the model in the Godwins report cannot be evaluated by the traditional measures of forecast accuracy does not mean

that the model cannot be checked against reality. The parameters in the model were calibrated so that the values of labor share of total cost, and the share of employment covered by SFAS 106 produced by the model matched up with actual values of these numbers.

Third, our confidence in the model's numerical results is bolstered by the sensitivity analysis which indicates that our results are quite robust to changes in the values of the model's parameters.

Response to request (5): provide the results of any sensitivity analyses performed to determine the effect of using different assumptions.

As mentioned above, Section IV of the Godwins report, pp. 34-43, is devoted to the sensitivity analysis. In particular, pp. 37-39 specifically discuss the sensitivity analysis of the macroeconomic model. The numerical results of the sensitivity analysis are presented in the table on page 41.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Treatment of Local Exchange Carrier Tariffs	)	CC Dkt. No. 92-101
Implementing Statement of Financial	)	
Accounting Standards, "Employers	)	
Accounting For Postretirement Benefits	)	
Other Than Pensions"	)	

AMERITECH OPERATING COMPANIES' REPLY TO OPPOSITIONS TO THEIR DIRECT CASE

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TABLE CONTENTS

SUMMARY

In this Reply, the Companies demonstrate that the incremental cost increase due to the adoption of SFAS - 106 meets the Commission's requirement for exogenous treatment. Specifically, as explained below, these cost increases are the result of a change in the generally accepted accounting principles (GAAP) for which the Commission has authorized exogenous treatment, provided it does not result in a double counting of the expenses through the GNP-PI. Since the adoption of SFAS - 106 was ordered by the Financial Accounting Standards Board (FASB), and the Commission has authorized all LECs subject to price caps to adopt SFAS - 106 finding it does not conflict with the Commission's regulatory policy, the Companies have no control over the recognition of this liability on their books. Nor do the Companies control the method of calculating the costs associated with the adoption of SFAS - 106. Specifically, FASB set forth explicit guidelines on the assumptions to be used in calculating the accrued OPEB expense. Consequently, the incremental cost increase attributable to the adoption of SFAS - 106 meets the Commission's criteria for exogenous treatment.

In addition, the inherent difficulties of estimating the OPEB expense under the accrual accounting method is insufficient justification for denying exogenous cost treatment. Since the Companies have demonstrated that these costs qualify for exogenous treatment, the Commission's remaining obligation is to determine the appropriate amount of expenses it should authorize to receive exogenous treatment. And, based on the Godwins study and the additional information provided in this Reply, the Companies demonstrate that the Commission should grant exogenous cost treatment to 84.8 percent of the incremental costs incurred by the Companies' with the adoption of SFAS - 106.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Treatment of Local Exchange Carrier Tariffs Implementing Statement of Financial Accounting Standards, "Employers Accounting For Postretirement Benefits Other Than Pensions"	)	CC Dkt. No. 92-101

AMERITECH OPERATING COMPANIES' REPLY TO OPPOSITIONS TO THEIR DIRECT CASE

The Ameritech Operating Companies (Companies),[1] pursuant to §1.411 of the Federal Communications Commission's (Commission) Rules, 47 C.F.R. §1.411, respectfully submit this Reply to Oppositions to their Direct Case as required by the Commission in its *Investigation Order*.[2] In this Reply, the Companies demonstrate that the Commission should dismiss the arguments set forth in the Oppositions to the Direct Case because they do not raise any substantive arguments against the Companies' Direct Case. Therefore, the Commission should grant exogenous treatment for the incremental costs of implementing the Statement of Financial Accounting Standards - 106 (SFAS - 106) which the Companies are required to implement by January 1, 1993.[3]

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[1] The Ameritech Operating Companies are: Illinois Bell Telephone Co., Indiana Bell Telephone Co., Inc., Michigan Bell Telephone Co., The Ohio Bell Telephone Co., and Wisconsin Bell, Inc.

[2] *Treatment of Local Exchange Carrier Tariffs Implementing Statement of Financial Accounting Standards, "Employers Accounting For Postretirement Benefits Other Than Pensions,"* CC Dkt. No. 92-101, *Order of Investigation and Suspension*, DA 92-540, 7 FCC Rcd. (released April 30, 1992) (*Investigation Order*).

[3] Financial Accounting Standards Board, Statement of Financial Accounting Standards No. 106, December 1990 (SFAS - 106). SFAS - 106 establishes new financial accounting and reporting standards for an employer that offers postretirement benefits provided other than pensions (OPEBs) to its employees.

I. Background[4]

On December 26, 1991, the Commission issued a *SFAS - 106 Adoption Order* authorizing all local exchange carriers (LECs) subject to SFAS - 106 to implement the new financial accounting standards on or before January 1, 1993.[5] On January 30, 1992, the Companies notified the Commission, as required by § 32.16 of the Commission's Rules, 47 C.F.R. § 32.16, and the *SFAS - 106 Adoption Order*, that they implemented SFAS - 106 as of January 1, 1991 for regulatory accounting purposes.[6] In addition, pursuant to the *Adoption Order*, Bell Atlantic, US West and Pacific Bell filed tariffs with the Commission seeking exogenous costs treatment for the incremental costs associated with implementing the new financial accounting and reporting requirements under SFAS - 106.[7]

In response to these tariff filings the Commission issued the *Investigation Order*. The Commission found that the threshold issue raised by each of the tariffs -- whether the cost of implementing SFAS - 106 should be treated exogenously -- is common to all price cap carriers. The

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It requires companies to change from the cash basis of accounting ("pay-as-you-go") for these benefits to the accrual basis of accounting for them.

[4] For a more complete discussion see Direct Case of the Ameritech Operating Companies, CC Dkt. No. 92-101, at 2-4, filed June 1, 1992.

[5] Southwestern Bell and GTE Service Corporation, Notification of Intent to Adopt Statement of Financial Accounting Standards No. 106, Employers' Account for Postretirement Benefits Other Than Pensions, 6 FCC Rcd. 7560 (1991) (*SFAS - 106 Adoption Order*).

[6] Letter to Mr. Kenneth Moran, Chief, Accounting and Audits Division, Common Carrier Bureau, FCC, from Walter J. Wagner, Director, Federal Regulatory Accounting, Ameritech Services, Inc., dated January 30, 1992.

[7] Bell Atlantic Tariff F.C.C. No. 1, Transmittal No. 497, filed February 28, 1992; US West Communications, Inc. Tariff F.C.C. No.s 1 and 4, Transmittal No. 246, filed April 3, 1992; and Pacific Bell Tariff F.C.C. No. 128, Transmittal No. 1579, filed April 16, 1992.

Commission also found that the resolution of the issue, as well as other issues raised by the tariffs, would require thorough analysis and review of complicated econometric studies and reasoning. It also concluded that the issues would be resolved best by full participation of interested parties through a notice and comment proceeding. Thus, the Commission made all LECs subject to price caps (whether or not they had filed a tariff) parties to the *Investigation Order* and required them to submit a direct case by providing the specific information outlined in the *Order*.[8]

On June 1, 1992, the Companies along with all other LECs subject to price cap regulation filed their Direct Cases as required by the Commission. The Companies' Direct Case demonstrates that the incremental cost change due to the adoption of SFAS - 106 meets the requirements for exogenous cost treatment under price caps, and that the method of calculating those incremental costs is just and reasonable.

On July 1, 1992, American Telephone & Telegraph Co. (AT&T), MCI Communications Corp. (MCI), Ad Hoc Telecommunications Users Committee (Ad Hoc), and International Communications Association (ICA) filed Oppositions to the Direct Cases filed by the LECs.[9] Each of these parties argue that the LECs have not demonstrated that the incremental costs which will be incurred by the LECs upon their adoption of SFAS - 106 should receive exogenous cost treatment. The arguments generally fall into two categories. First, they argue that LECs have not demonstrated that this cost change meets

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[8] *Investigation Order* at 3-4.

[9] ICA's Opposition was merely the attachment of a study conducted by Economics and Technology, Inc. (ETI). That same study was attached to Ad Hoc's Opposition. Therefore in this Reply, the Companies will only focus on the Oppositions of AT&T, MCI and Ad Hoc.

the Commission's criteria for exogenous treatment. Under this position, Opponents proffer several arguments, specifically that: 1) LECs control the costs of OPEBs thereby disqualifying the expense for exogenous treatment; 2) exogenous treatment will undermine the policies of price caps; 3) the Commission's prescribed rate of return already accounts for this accounting change; and 4) LECs have not proven that their rates will be confiscatory without exogenous treatment.

The second category of arguments challenge the method and manner of calculating OPEB expenses. Under this category, opponents generally argue: 1) the Commission should allow exogenous treatment for only those incremental amounts that are funded; 2) OPEB expenses cannot be accurately estimated and therefore should not receive exogenous treatment; 3) the Commission should prescribe the assumptions used in estimating the OPEB expense amount; and 4) the Godwins study is unreliable and therefore cannot be used to support exogenous treatment.

In this Reply, the Companies demonstrate that the incremental cost increase due to the adoption of SFAS -106 meets the Commission's requirement for exogenous treatment. Specifically, as explained below, these cost increases are the result of a change in the generally accepted accounting principles (GAAP) for which the Commission has authorized exogenous treatment, provided it does not result in a double counting of the expenses through the GNP-PI. Since the adoption of SFAS - 106 was ordered by the Financial Accounting Standards Board (FASB), and the Commission has authorized all LECs subject to price caps to adopt SFAS - 106 finding it does not conflict with the Commission's regulatory policy, the Companies have no control over the recognition of this liability on their books. Nor do the Companies control the method of calculating the costs associated with the